

Claims

We claim:

- 1) A mobile machine readable data acquisition apparatus comprising:
 - a housing,
 - a power means,
 - a scanning means for scanning a machine readable symbology,
 - a digitizer means receiving input from said scanning means and outputting a digital input signal for
 - a processor means having a machine readable symbology identification and decoding function which is linked to
 - a memory means for local data storage;
 - said scanning means, said digitizer means, said processor means, said memory means and said power means arranged and configured within said housing, adapted to be energized by said power means.
- 2) The apparatus of claim 1 wherein:
 - said apparatus includes an electronic serial number.
- 3) The apparatus of claim 2 wherein:
 - said electronic serial number is located on an RFID circuit, and
 - said electronic serial number is permanently set at the time of manufacture of said RFID circuit.
- 4) The apparatus of claim 1 wherein:
 - Said memory is an RFID circuit.
- 5) The apparatus of claim 4 wherein:

Said RFID circuit is operable as a transmitter.

- 6) The apparatus of claim 4 wherein:

Said RFID circuit is operable as a receiver.

- 7) The apparatus of claim 1 wherein:

said processor means further comprises an encryption function for encrypting machine readable symbol data decoded by said processor.

- 8) The apparatus of claim 7 wherein:

Said encryption function is a translation table.

- 9) The apparatus of claim 7 wherein:

Said encryption function is a mathematical algorithm.

- 10) The apparatus of claim 7 wherein:

Said encryption function is configurable.

- 11) The apparatus of claim 1 wherein:

said scanning means comprises an optical sensor/receiver, and a lens to focus optical signals.

- 12) The apparatus of claim 11 wherein:

Said scanning means further comprises an emitter.

- 13) The apparatus of claim 11 wherein:

said scanning means further comprises
an aperture between said lens and said optical sensor/receiver.

14) The apparatus of claim 13 wherein:

Said scanning means has a depth of field which enables the scanning of symbologies located within a Compact Disc case through said Compact Disc case.

15) The apparatus of claim 13 wherein:

said aperture is a slit, enabling uni-directional scanning.

16)The apparatus of claim 13 wherein:

said aperture has a cross or star form, enabling bi-directional scanning.

17)The apparatus of claim 13 wherein:

said aperture has a circle, elipsoid or rectangular form, enabling omni-directional scanning.

18)The apparatus of claim 13 wherein:

said apparatus has download means for downloading decoded machine readable symbols stored in said memory,

19) The apparatus of claim 18 wherein:

said download means is via modulation of said emitter.

20)The apparatus of claim 18 wherein:

said download means is via an electro-mechanical connection.

21) The apparatus of claim 18 wherein:

said download means is via an RFID.

21)The apparatus of claim 1 wherein:

said apparatus has a total weight of 20 grams or less.

22) The apparatus of claim 1 wherein:

said apparatus further comprises at least one switch, said switch operable to initiate an apparatus function with a single actuation, without requiring continued actuation of said switch.

23) A data transfer apparatus comprising:

a housing having a data acquisition device mating cavity arranged and configured to receive a data acquisition device,

a data transfer means, associated with said mating cavity for communication with said data acquisition device, and

a connection means for interconnection and communication with a host computing means.

24) The data transfer apparatus of claim 23 wherein:

said data transfer means is an optical emitter/detector connected to an analog to digital converter which is connected to a processor.

25) The data transfer apparatus of claim 23 wherein:

said connection means is via a connection between a keyboard port of said host computing means and a host computer keyboard.

26) The data transfer apparatus of claim 25 further comprising:

a switch means for interrupting a connection between said host computing means and said host computer keyboard.

27) The data transfer apparatus of claim 25 wherein:

said connection means supports two-way communication by utilization of a keyboard status indicator signal.

28) The data transfer apparatus of claim 27 wherein:

said keyboard status indicator signal is num lock, caps lock and or scroll lock.

29) The data transfer apparatus of claim 23 wherein:

said housing is integrated into a host computer keyboard.

30) The data transfer apparatus of claim 23 wherein:

said housing is integrated into a host computer.

31) A method for transferring data between a mobile data acquisition apparatus and a host computer, comprising the steps of:

connecting a mobile data acquisition apparatus with a docking device connected to a host computer between a host computer keyboard port and a host computer keyboard;

activating said apparatus, whereby said apparatus transmits a signal indicating the presence of said apparatus to said docking device;

said docking device senses said signal from said apparatus and transmits a hot key interrupt sequence to said host computer;

a software running on said host computer, monitoring said host computer keyboard port transmits a status indicator signal to said docking device;

said docking device transmits an acknowledgement signal to said apparatus;

said apparatus transmits an information record, indicating the number of data records stored in a mobile data acquisition apparatus memory;

said apparatus transmits said data records to said docking device which passes said data records to said software application running on said host computer;

said software counts the number of said records;

if the number of said records is equal to said information record said software transmits a successful transfer signal to said docking device which passes said signal to said apparatus.

32) The method of claim 31 wherein:

said apparatus and or said docking device send empty records to indicate an end of record transmission.

33) The method of claim 31 wherein:

upon receipt of said successful transfer signal said apparatus clears said mobile data acquisition apparatus memory.

34) The method of claim 31 wherein:

said data records are transmitted from said apparatus in encrypted form,
and
said data records are unencrypted by said software running on said host computer.

35) The method of claim 31 wherein:

an apparatus identification code downloaded.

36) A re-configurable electronic key, comprising:

a housing,
a power means,
a scanning means for scanning a machine readable symbology,

a digitizer means receiving input from said scanning means and outputting a digital input signal for

a processor means having a machine readable symbology decoding function which is linked to

a memory means for local data storage;

an output means, for outputting a stored key sequence.

said scanning means, said digitizer means, said processor means, said memory means and said power means arranged and configured within said housing, adapted to be energized by said power means.

said key configurable by scanning a machine readable symbology.

37) The key of claim 36, wherein:

said scanning means is an optical scanner,

said output means is an optical emitter.

38) The key of claim 36, wherein:

said output means is an RFID.

39) The key of claim 36, further comprising:

an electronic serial number.

40) A method for using an electronic key, comprising the steps of:

associating an access right with a user;

scanning a symbology describing said access right into an electronic key;

providing said key to said user;

allowing access to said user upon said users downloading of a memory in said electronic key containing said access right.

41) The method of claim 40 further including the steps of:

associating a serial number with said symbology;
 allowing access only if said key contains an electronic serial number
 matching said serial number.

42) The method of claim 40 further including the steps of:

transmitting said symbology from a remote location for said user to scan
 into said key upon receipt.

43) A system for acquiring information, comprising:

a mobile data acquisition apparatus with a scanning means for reading a
 machine readable symbology and a memory means;
 a host computer means with a connection to a remote information source;
 a communication means for information transfer between said apparatus
 storage means and said host computer means;
 said apparatus arranged and configured to use said scanning means for scanning
 a machine readable symbology;
 said symbology identifying an object for which information is desired;
 said host computer arranged and configured to receive information from said
 remote information source associated with said symbology.

44) The system of claim 43 wherein:

said apparatus further comprises
 a housing,
 a power means,
 a digitizer means receiving input from said scanning means and outputting
 a digital input signal for
 a processor means having a machine readable symbology identification
 and decoding function which is linked to said memory means;

said scanning means, said digitizer means, said processor means, said memory means and said power means arranged and configured within said housing, adapted to be energized by said power means.

45) The system of claim 43, wherein:

said apparatus and said host computer means are integrated into a cellular telephone.

46) An electronic device configurable via a machine readable symbology, comprising:

a scanning means for scanning a machine readable symbology linked to a processor means controlling said electronic device;

said symbology containing configuration data which determines an operating mode of said electronic device.

47) The device of claim 46 wherein:

said scanning means is an optical scanner with an emitter and a detector.

48) The device of claim 46 wherein:

the device is a consumer smart toy.

49) A two-way communication method for a device attached to a computer keyboard port and a computer, comprising the steps of:

receiving information into a computer keyboard port;

responding with at least one keyboard status indicator signal.

50) The method of claim 49, wherein:

said keyboard status indicator signal is

num lock,

caps lock, and or
scroll lock.

51) The method of claim 49, wherein:

said device is connected between a keyboard and said computer.

52) The apparatus of claim 1, wherein

said apparatus has a volume of 14 cubic centimeters or less.